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IS 12268-2 (1988): Automatic Steam Traps for Marine Use, Part 2: Classification [TED 19: Marine Engineering and Safety Aids]

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(Reaffirmed 2002)

Indian Standard

SPECIFICATION FOR AUTOMATIC STEAM TRAPS FOR MARINE USE

PART 2 CLASSIFICATION

1. Scope — Gives classification of main types of automatic steam traps according to the mode of actuation of their obturation device, disregarding their details of conception and construction.

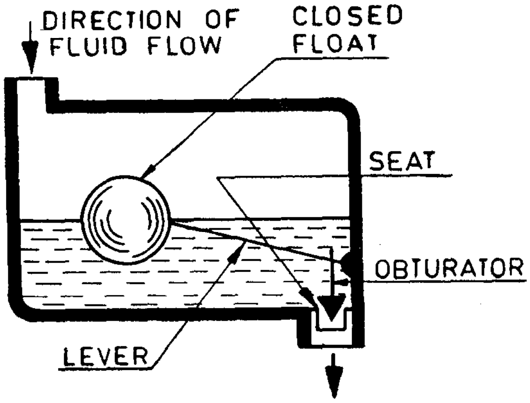
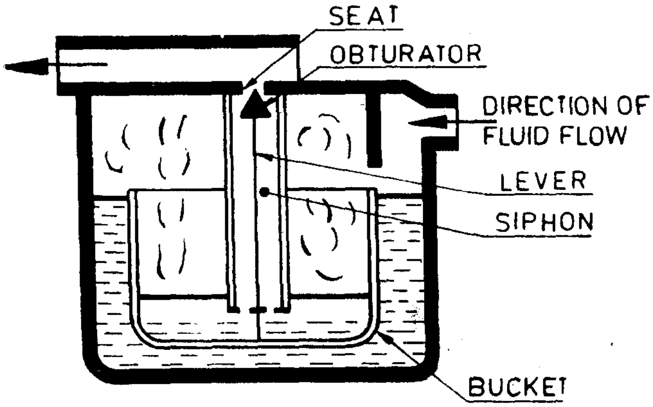
2. Classification

2.1 The types of traps defined in this standard are classified according to their mode of actuation.

2.1.1 Based on the mode of actuation of the obturation device, three categories of automatic steam traps can be distinguished:

a) Mechanical traps, actuated by the level of condensate (**2.2**);
b) Thermostatic traps, actuated by the temperature of condensate (**2.3**); and
c) Thermodynamic traps, actuated by the fluid dynamics (**2.4**).

Note — Other traps, combining these different types (or of a new design) may be developed, but these traps shall not be regarded as a characteristic type of automatic steam trap in the sense of this Indian Standard.

Sketch (diagrammatic)	Operation
2.2 *Mechanical Traps (Float/Bucket Traps)* (actuated by the level of condensate)	
2.2.1 *Steam trap with closed float*	
	The opening or closing movements of obturator are caused by variation of level of condensate in the trap shell.
2.2.2 *Steam trap with open top bucket*	
	The opening or closing movements of obturator are caused by variation of level of condensate in the bucket.

Marine Engineering Sectional Committee, MCPD 3 [Ref : Doc : MCPD 3 (745)]

Adopted 29 February 1988 | © November 1988, BIS | Gr 2

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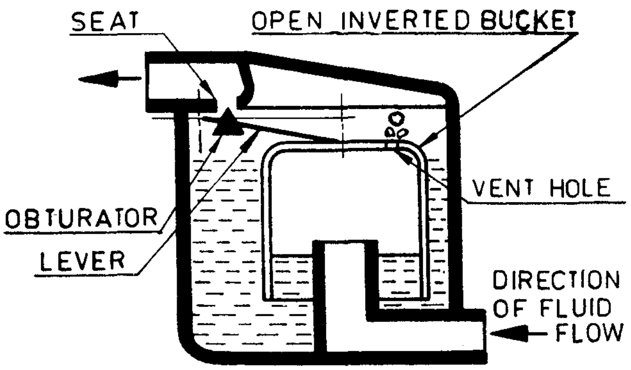
Sketch (diagrammatic) **Operation**

2.2.3 *Steam trap with open inverted bucket*

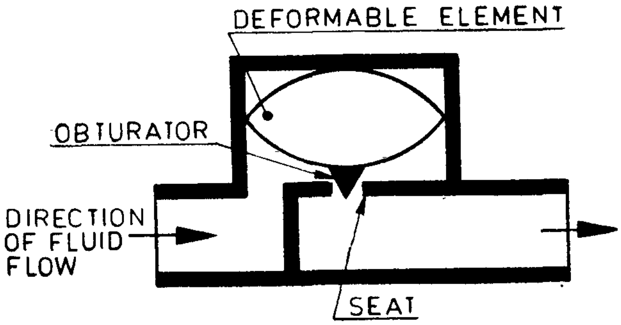


The opening or closing movements of obturator are caused by variations of level of condensate in the bucket.

2.3 *Thermostatic Traps*

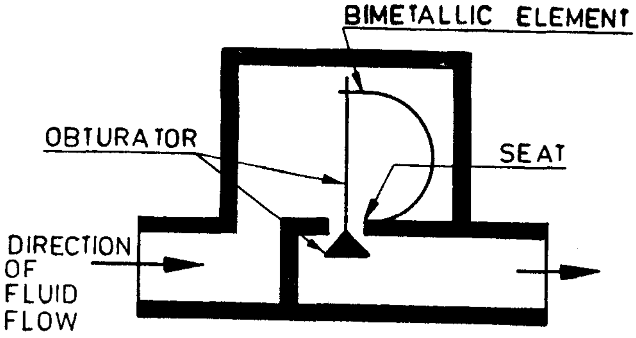
(actuated by the temperature of condensate)

2.3.1 *Vapour pressure trap*



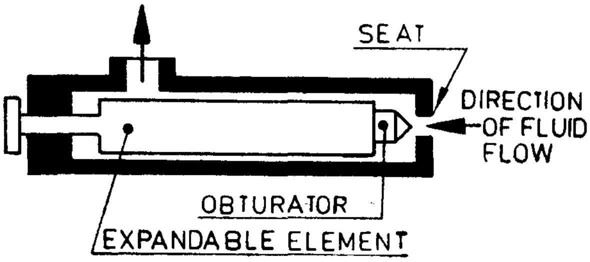
The opening or closing movements of obturator are actuated by imbalances created between the pressure of condensate in the trap and the vapour pressure of the volatile liquid contained in a deformable element.

2.3.2 *Bimetallic of thermoelastic trap*

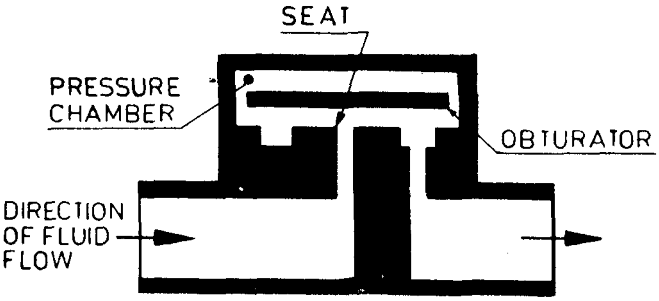
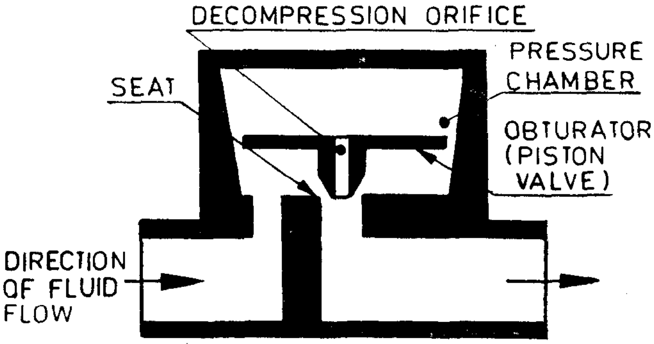
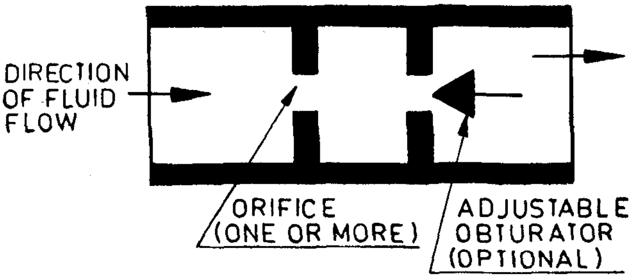


The temperature changes of the incoming condensate cause the deformation of bimetallic or thermoelastic element, and consequently the opening and closing movements of the obturator.

2.3.3 *Liquid or solid expansion trap*



The opening or closing movements of obturator are caused by temperature variations of the condensate acting on an element with a high thermal expansion coefficient.

Sketch (diagrammatic)	Operation
2.4 *Thermodynamic Traps* (actuated by fluid dynamics)	
2.4.1 *Obturator trap*  SEAT PRESSURE CHAMBER OBTURATOR DIRECTION OF FLUID FLOW	The successive differences of pressure between the inlet and the pressure chamber causes the opening or closing movements of the obturator.
2.4.2 *Impulse trap*  DECOMPRESSION ORIFICE PRESSURE CHAMBER SEAT OBTURATOR (PISTON VALVE) DIRECTION OF FLUID FLOW	The successive difference of pressure between the inlet and the pressure chamber causes the opening or closing movements of the obturator (piston valve).
2.4.3 *Labyrinth or orifice trap*  DIRECTION OF FLUID FLOW ORIFICE (ONE OR MORE) ADJUSTABLE OBTURATOR (OPTIONAL)	Fluids pass freely through the orifice. Condensate may eliminate or reduce the flow of steam or non-condensables.

EXPLANATORY NOTE

The standard on automatic steam traps is being published in following 5 parts:

Part 1	Glossary of terms
Part 2	Classification
Part 3	Face-to-face dimensions
Part 4	Performance tests
Part 5	Marking

This part (Part 2) of the standard is based on ISO 6704-1982 'Automatic steam traps—Classification', issued by the International Organization for Standardization (ISO).

Printed at Printrade, New Delhi, India